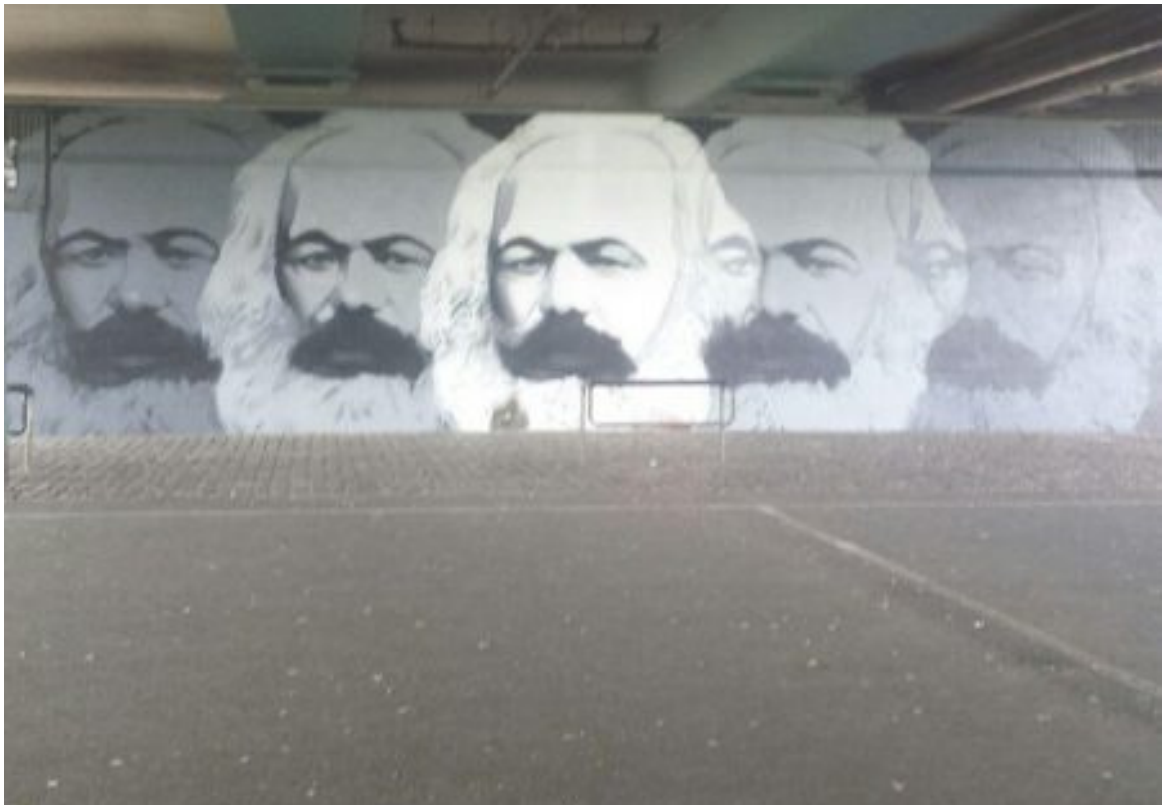

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MARX AS A DE-ONTOLOGIST: QUASI-NON-TRANSCENDENTALITY AND THE VIRTUALISATION-ACTUALISATION-MACHINE

ECONOFICTION CAPITAL, FINANCE, MARX, MARXISM, TRANSCENDENTALITY, VIRTUAL

For a further explanation of the concept of capital, we refer to French philosopher François Laruelle, who, in his conception of non-philosophy, speaks of “unilateral duality”. He generally first assumes that two or more terms and their relations are always determined by one term. This is the principle of idempotency: 1+1=1. (Laruelle: 2010) The second term and the relation between the first and second term are immanent to the One, or, to put it differently, the second term is the clone of the first term, but at the same time the second term retains its contingency, in so far as the first term does not postulate the second term absolutely, but radically. This kind of causality always points to a non-relation between two or more events or

relations and not between two or more things.

For a conceptual definition of capital, this allows us to analyse capital in the context of a unilateral "logic", i.e., *analogous to* the figure of "unilateral duality": if the first term stands for the capital relation and the second term encompasses the economic events and relations which are derived from capital, the two terms are not synthesised by a third, as is often assumed in Marxism, for example by abstract labour or value. Rather, the first term (capital in general as "logic" and as relation) uni-laterally determines in the last instance the second term (the third term, etc.) and the resulting relations, divisions and constellations between the terms. Both the second term (standing for commodity, money, production, labour, circulation, credit, forms of capital, etc.) and the relation between the first and the second term are immanent to the first term. This determination *is* the immanent mode or "logic" of capital, where capital in general has to be simultaneously defined as a logical construction and as a relation.

But there is another important aspect of capital, which can be described with the term "Quasi-Transcendentality" and relates to the notion of total capital [*Gesamtkapital*]. We have to differentiate between capital in general (the movement of categories) and total capital. With respect to total capital, the effects of connections between "effect-entities" have to be examined, without referring to an organic or Hegelian conception of totality (we refer here more to Latour's rejection of the relation between part and whole, cf. Latour 2017: 168, without, however, fully adopting his theoretical approach). Rather, the effects have to be related to the concept of quasi-transcendental total capital. Total capital is not to be thought of as a unifying system, but as a determination and, at the same time, as virtual potentiality, so that in respect to the latter it does not follow a plan, not even in the sense of the invisible hand of Adam Smith. A mathematical approach to this conception is the vectorial notation, where the single subsets, as a coordination of a vector x, are written in a n-dimensional mathematical space M'. (cf. Quaas 2016: 215) The mathematical notation, however, ultimately remains an approximation, inasmuch as the virtual capacity of capital *sui generis* transforms the mathematical space.

It cannot be concluded from the linear successiveness of the conceptual representation of capital that the first form of appearance – the commodity which, in the opinion of many Marxists, Marx in *Capital* Vol. 1 demonstrates to be an elementary form, after having previously introduced the capitalist mode of production as an immense collection of commodities in a single sentence – is a primary and elementary abstract form from which all further concepts are dialectically developed. It is rather the case that the decisive concept, as the title of the three volumes of *Capital* already indicates, simply capital, to which all other concepts, terms and categories stand in an immanent, yet not undifferentiated and unbroken relationship, so that the transitions between the various concepts and categories must always be problematised. We can now present the preliminary result in the following manner: unilateral duality of capital = logic of capital = virtual total capital = quasi-transcendentality of capital.

Let us now more closely examine the notion of the quasi-transcendantality of capital, or the notion of total capital. Total capital is understood primarily in its transcendental constitution, namely as an *a priori* settlement to which individual capitals are passively related, inasmuch as they must follow the *a priori* of total capital and its axioms without exception. At the same

time, total capital secondarily comprises the result of effects (the active price-setting and cost-reducing strategies of individual capitals which take place through competition) and even of contingent economic strategies which can always fail. To summarise, capital "flows in a field"[1] (Nail 2018) and it is double folded: first determination (capital) and second determination through the determinate (individual capitals). In consideration of the second moment, we speak only of the *quasi*-transcendentalityof capital, whereby it must be added that the effects appear for many Marxist authors as causes (as quasi-causes), and in this lies also the possibility of the misjudgement of economic structures. The quasi-transcendental determination of capital is not a Kantian-inspired subjective transcendentalism, but must be understood *sui generis* as an objective or objectifying (and historical) determination.[2] Here economic events are given or effected, i.e. they are the effects of objective economic structures (given-as-givenness), but this requires always the conceptual analysis of real or empirical economic events (given-without-givenness). The concept of total capital functions here not as a totality or even as a super-organism, but rather as a setting and historical transcendentality. Moreover, the prefix "quasi" emphasises that there is no availability of structure without a genesis (and a set of contingent actions).

It should be noted that the economy as reality and the logic of theory are not identical, nor can they be so easily divided, since the economist is not an external subject of thought which constructs a theoretical object called "the economy". The thinker and their concepts are always already a part of real economy, in which one has to work, to count and to deal with money. But the discursive-conceptual dimension of the exposition [*Darstellung*] does not coincide 100% with economic reality,[3] which in turn means that, according to Althusser, the analysis of capital must always be based on a theoretically given (an object of knowledge and not a real object), although the economist is always, in its pragmatic dimension, a part of the daily economy of money.

The structural determination of capital is responsible for the transformation of the multiplicity of individual capitals as effect-entities of total capital insofar as they are placed in an economic milieu that exerts a real causal influence upon them. However, the concept of the quasi-transcendental total complex of capital (total capital) cannot be grasped if one does not take into account the war of individual capitals within competition and its correction processes. Competition is here to be understood as constitutive in the sense that, as an important relay for capital, it prescribes a very specific form of movement for individual capitals, within which, on the one hand, they must necessarily operate as functional entities of total capital precisely by actively employing price-setting and cost-reducing strategies, and on the other hand, institute contingent strategies which can always fail. As Marx writes: "Competition in general, this essential locomotive force of the bourgeois economy, does not establish its laws but is their executor. [...] Competition therefore does not *explain* these laws, nor does it produce them; it lets them *become manifest*" (Marx 1986: 475). Marx repeatedly writes that competition is the real function of capital.

The concept of total capital further implies that with respect to capitalist corporations, one must always speak of some (individual) *capital* and insofar as this is conceived as one, whatever it is, it is indicated that it always remains subject to the "logic" of capital, to what, again, the determination by total capital in the last instance refers. It is not the quality and

form of production of the respective individual capitals that is decisive here, but only the fact that each individual capital always already has to follow the axioms and processes of capital, whereby this transcendentality only prevails in the tendency – and "tendency" implies virtualisation (which "relativises" the determination of capital, similar to the movement and countermovement within the law of the general falling rate of profit) which the individual capitals constantly actualise by selling their products. Or, to put it differently, with regard to the concept of total capital, the interlocking of determination/necessity/settlement and virtualisation/actualisation/contingency must always be taken into account.[4] This aspect of virtualisation, which among other things consists in the fact that the realisation of the generated products is never guaranteed for the individual capital, always, in the last instance, remains linked to the aspect of determination. *One could also formulate it with more subtlety: the capitalist mode of production* does not *determine* absolutely – it preforms and sets a constituent framework.[5] On the other hand, in economic empirical reality we are always confronted with contingency: economic strategies remain unpredictable. One cannot even 100% predict the results of economic programs and the actions of corporations and individuals, as economists try to do with their prognosis and always fail. The actions of a monetary subject or of a company even create uncertainty for many other economic actors. An economist can predict the falling prices for a product, but they cannot predict whether a company will not develop a new product, precisely on account of this price fall, which leads to a displacement of the old product and thus falsifies the prediction.

The systemic order of the capital economy is generated in and by continuous disorder: just as order cannot be equated with the optimum of regularity, disorder cannot be identified with the absence of order or with pure chaos. According to Anwar Shaikh, with the terms of Marxist economy, a wide range of economic phenomena can be explained by a small set of operative principles, which means that current economic events revolve around ever-moving centres of gravity that are *sui generis* those of the logic of capital and total capital. (Shaikh 2016: 5) Shaikh, who uses here terms of relativity theory, describes these movements as the systemic mode of turbulent regulation, whose characteristic expression takes the form of a repetition of short, medium and long-term patterns.[6] Not only is there a continuous adaptation to averages and equilibria by changing from one state of equilibrium to another, but the movements of capital are in the last instance in a process of imbalance, which in turn are always bound to changing gravitational centres. This includes the system's permanent capacity to adapt to disturbances and extreme turbulences, and, last but not least, to cyclically occurring crisis by raising critical thresholds, expanding the scope for dealing with instability and keeping normalisation processes flexible. (cf. Bröckling 2017: 128) The resulting economic growth is not only shown in terms of size, but also in the densification and the increase of connections.

The concept of total capital includes not only a structural determination (in a field), but also a dynamic-temporal (and contingent) process. Regarding the latter, through the process of competition in dynamic compensatory movements carried out through specific price fluctuations, the production of average profit rates of the different sectors initially takes place. This must be considered as an absolute necessity, because otherwise the most productive company would inexorably move ahead of less productive companies and form a permanent monopoly, which would eventually eliminate all competition between companies. Marxist

theory has attempted to grasp the formation of monopolies with the concept of the centralisation of capital, in which small companies are either eliminated or integrated into large companies, thus reducing competition to the point where there exists a vertical integration of all the production processes in one company (monopoly) or a group of companies (oligopoly).[7] This development has not emerged in the historical course of capitalism in contrast to the concentration of capital, which concerns the increase in the size of a company. Thus, the process of the creation and split of companies always remains to be considered as a consequence of innovation, as the establishment of new business fields and of outsourcing, in which transnational companies separate from certain business fields or outsource elements of the global vertical supply chains. The identified current growth of the number of companies in Germany shows that, despite the recent waves of company takeover, a statistically reported degree of economic centralisation, measured by the share of large corporations or the 100 largest corporations in total economic output, has not increased, but in some cases even decreased. The share of the 100 largest corporations in the net value added of all companies decreased on average from 20 per cent in 2000 to 16.4 per cent in 2010. However, these figures also illustrate which high level has been reached in certain sectors with the concentration of capital, since only 50 companies produce half of Germany's total industrial output. In the sector of financial institutions, the business volume of the ten largest companies alone accounts for 50 per cent of the total volume of the sector.

Italian theorist Mimmo Porcaro characterises the current phase of accumulation of capital in the industrial sector as a period of "concentration without centralisation", a phase in which few companies grow enormously in size and, at the same time, the competition between these companies intensifies, while weakening all companies nationwide. (Porcaro 2015: 24) These tendencies show themselves in the fact that in the developed countries in the 1990s, the most successful corporations were three times more profitable than the average company, and they are currently already eight times more profitable. Every second company with an above-average share of profits comes from the financial or technology sector. At the same time, however, small companies are now established, which, due to their extraordinary technological know-how, can no longer easily be taken over by large corporations. If, however, concentration in the large corporations continues to increase, integration and growth will today occur less through the use of new technologies, but more through the processes of the financial markets and the global supply chains and its financial networks, which in turn means that competition will have to develop in very specific ways. On the other hand, the highly dense financial networks today are characterised in such a way that an ever increasing number of payment promises and payment streams of the big financial companies flow through the networks, while the number of financial companies decreases, so that payment flows are constantly and recursively flowing back and forth between the same companies, leading both to a tremendous complexity and densification of the networks, including a high concentration of owners in the financial companies themselves, but also to a specific transformation of the competition between financial companies, but also between other companies. (Sahr 2017: Kindle Edition: 6286)

Financial companies share the ritualised belief that the risks and complexity of their operations are regulated by what they call the "market", and this enables them to apply speculative capital profitably. If, due to the formation of oligopolies, competition in all sectors

is weakened and uncertainty is reduced, then it is the task of the financial sector, to stimulate or simulate competition itself. If, for example, in many large stock corporations shareholders are identical, then competition is shifted to the management of corporations. (The networks that currently exist are characterised by a tripartite globalism where it becomes increasingly difficult to distinguish the economic, technological and ecological levels from one another.)

Within the framework of the compensatory movements for the production of average profit rates, each individual capital appropriates a certain share of the surplus value which is produced within a national economy, which, however, is not identical with its own surplus value that is produced in a certain period of time, but tends to be proportional to its share in the total capital, whereby it must always be taken into account that individual capitals attempt with the methods of labour intensification and relative surplus value production through technological innovation to increase the productivity of their labour and capital in order to achieve extra profits over their competitors.[8]

This type of differential capital movement is always oriented towards expected future profit rates. It is necessary here to strictly distinguish between average and incremental profit rates (the profit rates related to the new investment). Only the latter is relevant for the new investment and is adjusted over time by the movement of competition and the mobility of companies in different sectors. The profitability of the older and less efficient production equipment of companies no longer has a regulating power. What really counts now is the coming profitability of new investments (the incremental profit rate), whereby aggressive cost-saving investments are made even if they lower the profit rate of companies in the short term. But it has to be said that attempts to predict future price changes lead to alterations in economic strategies in anticipation of price changes, which, by altering the variables on which the prediction is based, change the real prices. In the objective total complexity of capital certain companies succeed in increasing their productivity in relation to others and thus distribute a calculated “value quantum” (production price plus average profit rate) to more products against the previous production methods (the products become cheaper). The more efficient company is thus able to sell its commodities cheaper than the commodities of other companies due to technological innovations.[9] (cf. Bahr 1983: 434) The more productive or more profitable company now earns an extra profit for a certain period of time, which remains related to the total macroeconomic value. However, this macroeconomic value cannot be a purely current size of stock (measured by GDP), but has, rather, as a flow figure a virtual-real dimension (virtual here also means that an absolute value quantum of total capital is ultimately not measurable). The calculating economist, however, continues to pretend, as if in a given period a fixed total value sum is produced in a national economy and also realised in circulation and can be clearly measured as GDP. But within a given period of time, the existing proportions (quantities, prices, values) between the companies are constantly shifted by further productions and possible realisations of profits as well as by technological innovations within the framework of capital as a total complex. Only as an ideal type are market values an average of the values created by individual producers with different technologies.

If profit is the central motive of capital, then the profit rate is its most important measure (at least for industrial capital). And if growth is an intrinsic aspect of the reproduction of capital, then the flow of money-capital takes place in the most profitable sectors, i.e. any new capital

tends to flow faster into those sectors where the profit rates are higher than average, and it flows more slowly into those sectors where the profit rates are lower than average. This should be understood not only as an aspect of the entry and exit of companies into or out of markets, but also as a process of acceleration and deceleration of the capital flows. In the more productive sectors, the faster influx of capital will, over time, lead to a higher supply of goods, which will tend to bring prices and therefore profits down again, while the opposite will be true in the decelerated sectors. Thus, the realisation of extra profits is also reflected in their disappearance, while the tendency to equalise profit rates streams across all sectors. This is part of an emergent process (which is not consciously intended by any economic actor), whereby profit rates can undercut and exceed the already fluctuating centres of gravity in order to approach the average again in certain patterns (turbulent arbitrage within the framework of total capital). However, the equalisation of profit rates in no way refers to a state of equilibrium, but rather implies repetitive and at the same time turbulent movements of arbitrage around the centres of gravity of capital, which themselves are constantly changing. (Shaikh 2016: 260) The average profit rate is thus not to be understood as a uniform profit rate, but as the result of a continuous distribution of profits around the average.[10] This is a result of price formation, not of production. Insofar as these periodic movements of companies, with their upswing and downswing and their circulation and circling around changing midpoints, which are related to the gravitation centres of capital, are driven by the calculation, prognosis and discounting of the profit rates of future production processes, the relevant profit rates that balance out over certain periods of time are those that relate to new investments. (Ibid.: 254), The incremental profit rates in turn fluctuate around the general profit rates and thus generate new average profit rates, which also in turn fluctuate. Shaikh, in his recently published study *Capitalism: Competition, Conflict Crises,* emphasises that here, however, the growth rates of the profit masses (and thus the speed), and not only the profit rates, must be considered. (Ibid.: 593)

Accumulation refers to the transformation of surplus value into capital for the purpose of its expansion and exploitation. The (expected) profit rate of companies is central to capital accumulation because profit is the very purpose of all capitalist investment. Therefore the profit rate together with the profit mass (and their relation) must be considered the decisive measure of the success of a company. The high-frequency trade with securities and currencies has shown that even with low profit rates or profit margins enormously high, profit masses can be realised if the moved sums of money capital are big enough. If the profit mass should be further increased, a decreasing profit rate requires an ever larger capital inflow and new forms of financing. The concentration of capital and its globalisation, as well as the strong influence of the financial sector on accumulation, have here in part their rationale.

The analysis of differential capital accumulation, which is only briefly and outlined as an ideal type here, coincides with what we call elsewhere “actualisation-virtualisation-interconnection”. (Szepanski 2014a) The term “entanglement” perhaps emphasises even more strongly than the term “interconnection” what happens in economic processes both simultaneously and over time. The problem here consists exactly in the fact that the dimensions of temporality and simultaneity – the problem of the temporalisation of time – has also to be thought as a constant passing (of time), so that simultaneity seems to have no place within time, for which simultaneity is the impossibility of time itself, but always contains the possibility of grasping

time in itself. (cf. Nozsicska 2009: 291f.) Time is virtuality, whereby differently running times are actualised without ever dissolving simultaneity. Precisely when time is actualised, it remains virtuality – a paradox that indicates the problematic nature of virtuality itself.[11]

Let us briefly re-formulate the problem of the production of average profit rates in its ideal-typical way (which is important to state here) as follows: differential accumulation by means of the economic Mathem (through the price-money process and its numbers, a-significant signs and methods) orients unequal work, technologically different production processes, different qualifications of workers and unequal working hours within the tendency back to averages, which themselves vary over time. Tendency here also means that there exist constant counter-movements against the production of the average profit rate, which is expressed, among other things, in the search of individual capital for extra profits by means of technological innovation or the appropriation of cheap raw materials, energies and labour (cf. Moore 2015). The process is made first and foremost through money, but it also requires a whole range of other scales, techniques of measurement and a-significant signs/indicators to establish valuations, classifications, differentiations and, in general, accountability within and between companies. The mathematics (Mathem) of economics also possesses an assignative or performative aspect, since not only does it record valorisation processes, whose criteria are efficiency and rentability, but also stages certain allocations. The numerical objectivity, in which the comparisons between different sizes are written, in turn potentiates the competition between the evaluated companies, so that an almost incestuous relationship between differentiation, homogenisation and hierarchisation is created, in which the economic actors are inevitably involved with their contingent strategies. *If capital is* understood *as a total complexity, then the informational* entropy, which is inherent in the production and strategies of individual capitals, *must* necessarily be subject to a reduction that inevitably brings into play the Mathem of economics as a coding of a-significant signs, a formalisation with which the economic actors, by means of the specific systems of mathematics and probability theory, try permanently to correct and simultaneously exploit the uncertainty and elasticity of the various economic variables. This also means, however, that in the last instance, measurements by money take place, which verify that averages and deviations take place. (Strauß 2013: 74f.) The mathematics (Mathem) of economics makes measurements possible and at the same time provides an interpretation matrix oriented towards the measure of the successful market-mediated reproduction of capital. Bearing in mind that the structures of economics (building average) cannot express themselves directly in actualisation, the a-sginificant signs (math, tables, charts, algorithms, etc.) are necessary so that the Mathem of economy (ibid: 69f.) must necessarily be added to the concept of capital, i.e. (conceptual) capital and its economic Mathem (difference calculus) must be superposed.

From the point of view of individual capital, the economic procedure around virtualisation-actualisation-interconnection can be presented as follows (Ibid.: 304f.): First, in the given period t0, the production of a certain number of products takes place on the basis of the profit expectations of a company. This process is based on business calculations (quantities, cost calculation, market data, depreciation rates, etc.), which are based on semiotic, statistical and mathematical parameters and variables. Secondly, a virtualisation of the distribution of quantities of commodities takes place, starting from production and pricing, which should then lead to the realisation of quantities of commodities. Thirdly, the sale of products in the

period t1 presents itself as a triple actualisation: 1.) A part of the products is actualised in the given period as a realised quantity of commodities. 2.) Only in the existing expectation and therefore quantitatively indeterminate, is exploitation in the period t0 actualised quantitatively at time t1, as if it had already existed at t0. In real terms, the actualisation is characterised by a difference between expected and realised price masses. 3.) An actualisation of the demand takes place with the limited means of the purchasing power of the masses or other companies in confrontation with the existing supply of commodities. The realised quantity of commodities in t1 in turn forms the starting point for adjusted profit expectations of the company for the period t2, reflected in changed investment ratios which in turn influence the respective investment and consumption funds. The average profit, which is realised by a company at time t1, is related to the actualised surplus value of the total capital at time t0, whereby in t1 the initially and purely virtual surplus value of the individual capital is locked to the "measure" that the number commodities can achieve in confrontation with purchasing power.

In the context of the conceptual exposition [*Darstellung*] of capital, it is assumed, as if despite its virtual character, total capital is quantifiable, whereby we are dealing at this level with an ever-changing number of actualisations at any given time, because the individual capitals produce and sell in different sequences, rhythms and tempos, ergo the flow sizes and variables dominate the stock sizes. (Ibid.: 305) The theory, however, continues to proceed as if the total capital as a value quantity at a given point in time (under the assumption of simultaneity) could be quantitatively written and fixed, whereas it must, in contrast, always be considered that a "value quantity" does not exist quantitatively on the total level, but is called up and withdrawn in an immense number of commodity-money transactions (in a period) and in a way, as if total value would just quantitatively exist. As Strauß writes: "The inscription of the differentiating value – and this is the validity of money in all registers, semio-economic value – actualises the virtual distributability of physical quantities [...] The inscription of prices actualises this virtual distributability of physical quantities in monetary form" (Ibid.: 307). Production also creates certain amounts of value in a period, which are at the end, as we said, divided up so that the final results *differ* from the immediate results of production; total value cannot be quantified. Further, prices and values at the end of a period are not the same as those at the beginning, which would otherwise mean the economy is in stasis. But this is not the case. If prices would be the same at the beginning and end of a period, they would differ from prices at the start of the next period. As Alan Freeman writes: "But the end of the current period and the start of the next one are the same point in time, so two different sets of prices must apply at once [...] The fundamental difference between this and all temporal approaches is that in the latter, prices change during the period, that is, while production is going on" (Freeman: 2021). This analysis, to repeat, concerns the economic processes in the industrial sector portrayed as an ideal type.

We can add here a few differentiations. Jason E. Smith refers, in his book *Smart Machines and Service Work*, extensively to the economist William Baumol, who assumes that developed industrial countries since 1960 are divided into two major economic sectors: the technologically progressive sector, whose production processes involve innovation, high rates of accumulation and large-scale processes, and the technologically stagnant sector (service sector), whose technological structures tend to prevent significant increases in labour

productivity. At the same time, it can be precisely the dynamism of the first sector that causes stagnant productivity rates in the second sector, insofar as in the innovative sector over certain periods of time, machines are used that allow a higher output through the use of fewer workers (even if output remains constant, then the use of new machines definitely corresponds to the use of fewer workers), so that redundant workers have to find employment in other sectors, today especially in the service sector. (Smith 2020: Kindle Edition: 1251)

Thus, the stagnant sector will tend to increase especially in terms of employment numbers, although income ratios are relatively elastic here. And because productivity in this sector remains low for several reasons,[12] the increase in output here leads to an increase in employment. Ultimately, this development, i.e. the differentiation in the growth rates of productivity, leads to a gap, whereby productivity in the first sector continues to rise, while in the second sector (services sectors), it tends to remain constant, which in turn leads to jobs that are lost in the dynamic sector and are absorbed by the stagnant sector. For Baumol, this trend leads to a growth rate in the economy that asymptotically tends toward zero. Solow's productivity paradox, which states that the computer is everywhere today except in the statistics on productivity, would today have to be corrected to the effect that the rapid computerisation of the innovative sector of the economy has led to declining growth rates in productivity throughout the whole economy.

In his book *Automation and the Future of Work* Aaron Benanav assumes an increasing deindustrialisation in the developed countries of the global North since the 1970s. To support this thesis, Benanav examines the development of productivity as the relationship between output and employment. The more output is produced per worker, the higher the labour productivity. For all sectors, then, the growth rate of output minus the growth rate of labour productivity is the growth rate of employment. According to Benanav, if the output of cars increases by 3% and labour productivity increases by 2% in the auto industry, then employment increases by 1%; and vice versa. Whether changes in innovation result in job destruction depends on the relative speed of growth in productivity and growth in output. Benanav comes to an important thesis: if output grows more slowly than labour productivity, then the number of jobs will fall. (Benanav 2020: 19)

While the growth rates of productivity since the 1970s in the U.S. were relatively high compared to those of output (leading to a decrease in employment growth), this was not because the former grew faster than before (which could be the sign of accelerating automation), but because output had grown much more slowly than before. For Benanav, this decline in output growth rates, as a sign of deindustrialisation, cannot be explained by technological terms alone. Since the end of the twentieth century, one could even speak of a global wave of deindustrialisation, as described by Benanav.

We cannot go deeper into the problems of growth, productivity and technology here. There are at least three main difficulties of the continuation of growth in a capitalist economy. At this point the following however can be said: an economy that is to maintain a constant rate of return in the long term must grow at a constant rate. A growth rate of 3% corresponds to a doubling period of GDP of 23 years; a growth rate of 10% leads to a doubling of GDP after only 7 years. If the increase of the rate of return has become the general goal of the economy, this entails an acceleration of all processes dominated by the economy. Thus, if the world

economy grows at three per cent per year from today, it would approach one quadrillion dollars of GDP by 2100.

Second, economic growth to date is still largely dependent on fossil fuels, and this type of energy is a non-renewable resource, whose cost is likely to increase over the course of the twenty-first century. The issue of possible renewable energy integration will not be discussed here.

Third, private money creation through credit/debt, whereby interest cannot be created through credit, means that there is always more debt in the system than the ability to repay it. For example, if a bank makes a $1,000 loan with 10 per cent interest, it does not create the money to pay that interest – that would be $100. The bank just creates $1,000, not $1,100. So the question must be: where does the interest come from? The only possible solution is that the interest must come from the utilisation of capital in the future – that is, there is never enough money in the system currently to pay off all the debt. In this sense, the source of debt as a technology of power for creditors lies in its own permanence.

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[1] Economic events can be conceptualised as relations between stocks and flows, which includes the relation of production (physical products) and circulation (flow of capital and value).

[2] The transcendental is not a condition of possibility because there are always actual

processes. Possible conditions are therefore an idealistic abstraction. But the transcendental is also not an empirical condition, since its condition cannot itself be empirical. Otherwise there would be no difference between condition and conditional. The transcendental of capital is not a universal condition but necessarily historical. If a transcendental condition describes the rules or ordering of relations, these are relations of movements, insofar as motion here is neither ideational nor empirical. It is a process by which things and events themselves are ordered. Transcendentals of capital exist *a priori*, but include emergent material structures, patterns and circulations. For the concept of historic transcendentality, see Nail: 2018.

[3] Thus, the term "real abstraction" often used by Marxist theorists can at best refer to a skewed analogy between concept and reality, i.e. concept and reality are ultimately always to be thought from their non-identity, insofar as reality always escapes the concept.

[4] What is at issue in this point is transcendentalism and abstract potency, contrary to Althusser's late philosophical-political determination of the necessity of contingency, which is not a necessity that has contingency, but rather necessity "is" contingency. We won't deny contingency, but rather situate it within an interdependency and relation to determination.

What holds capital together, which always follows the logic of profit, is a normalised quantum reality. Total capital is constituted by very specific interactions, namely those of competition which are placed in a quantum-field. This filed of total capital includes virtual states and relations, which are energetic blank voids. The quantum reality of capital is non-empirical and virtual, a hidden reality. An empty and abstract quantum-structure prevails in the logic of capital. In the entities of capital all energy levels are never occupied, which are blank voids, but are quantum realities and effective. Total capital is under this aspect equal to an imaginary variety of formulas or an abstract numerical reality, whose potentiality is intensified by the probability of reality. For this reason, the Schröder equation must be normalised and squared: $\psi px(x, t)$ to the power of 2. This amount indicates how the probability of an individual capital can retrieve a power x at the time t.

[5] On this point, Robert Kurz also takes a Marx-oriented position when he speaks of the *a priori* or transcendentality of capital. With regard to the concept of total capital, Kurz writes in his book *Geld ohne Wert*: "The real categories of capital theoretically presented by Marx are therefore from the beginning and at all levels of representation to be understood only as categories of the social whole, of total capital and its total movement as a total mass, which cannot be directly empirically grasped because it is qualitatively and quantitatively something different from the empirical movement of individual capitals" (Kurz 2012: 177). Marx's concept of total capital implies from the beginning the "total process". However, Kurz must be corrected insofar as the concept of total capital is neither a real category [*Realabstraktion*] nor a quantitative category. It is at the same time a transcendental category and a virtuality which cannot be expressed quantitatively.

John Milios also emphasises the importance of total capital. He refers in his book *Rethinking Imperialism* (Milios and Sotiropoulos 2009), co-authored by Dimitris P. Sotiropoulos, to an important passage of Marx, where he writes that "the immanent laws of capitalist production manifest themselves in the external movement of the individual capitals' and 'assert

themselves as the coercive laws of competition, and therefore enter into the consciousness of the individual capitalist as the motives which drive him forward'" (Marx 1990: 433). (Milios and Sotiropoulos 2009: 114). And as Marx writes further: "a scientific analysis of competition is not possible, before we have a conception of the inner nature of capital"(Marx 1996: 321). Milios and Sotiropoulos correctly conclude that the "immanent laws" of which Marx writes here can only be those of total capital (as social relation and national total capital), whereby the individual capitals appear as fragments or parts of an "external movement" (of competition) and can only take their place within the structure of total capital if they follow the "immanent laws" of capital. The concept of total capital is complex and was first introduced by Marx in *Capital* Vol. 3. The structural determination of total capital transforms the individual capitals into entities insofar as companies are always already located in a "legislative" economic milieu. In these quasi-causal processes, competition as a specific inscription of the capital relationship into the differential accumulation includes an important "function".

[6] Turbulent regulation and the recurrence of patterns are considered as decisive gravitational tendencies of the economic system. (Shaikh 2016: 5) Economic macro analysis is first and foremost about the determination of commodity prices, profit rates, wage rates, interest rates and exchange rates. (Ibid.: 1946ff.) These processes have two tendencies: 1.) Balancing-out tendencies, which are characterised by the restless search of individual capitals for monetary advantages, whose unintended result consists precisely in the elimination of differences, which in turn motivates the pursuit again. While the average wage rate depends on productivity, profitability and on the class struggle between workers and capitalists, the average profit rate depends on wages, capital intensity and productivity. At the same time, the averages are the result of microeconomic projects and the interactions of individual capitals, whereby competition plays the decisive role. Shaikh subsumes both processes under the concept of real competition, whereby the profit motive plays the central role. (Ibid.: 6); 2.) Formative tendencies that determine the path around which the balancing-out movements fluctuate. The second set of gravitational tendencies comprises the turbulent macro dynamics of the system, including processes of growth and stagnation. Here again, the profit motive is the dominant factor that is ultimately responsible for the regulation of investment, growth, cycles, employment and inflation.

The centrality of the profit motive has several implications. 1.) A theory of profit and wages must be developed. 2.) The role of profitability in real competition must be determined, insofar as all aspects of companies are affected, leading to a theory of price, which is determined by competition, and to the theory of endogenous technological change. 3.) The expected rate of profit regulates investment and growth and also determines the relationship between aggregate demand and aggregate supply. (Ibid.: 6) The decisive factor here is not the actual profit rate of a company, but the regulating profit rate within an industry sector and the profit rate on future investment. Finally, the investment is driven by the difference between profit rates and interest rates, whereby the interest rate is the benchmark for the investment.

[7] Marx described the monopoly as a special individual capital that succeeds in systematically realising an extra profit over a long period of time; the monopoly is not opposed to free competition, but remains located within it.

[8] In extensively expanded reproduction, both the number of workers and the mass of

means of production are increased, while in intensively expanded reproduction, an increased productivity is generated by technical and organisational progress and by increased qualification and rationalisation of labour-power. In most cases, it is not the inventors but the first imitators who introduce an innovation into the economy. Today, technological progress in industry tends to reduce capital expenditure in relation to the product, i.e. to the increase of capital productivity. The price of the means of production decreases while their performance increases. A decisive role is played here not only by the reduction in the price of electronic components through economies of scale (increased economies of scale are productivity improvements that result from intensive technology and improved organisation and rationalisation), but also by the use of information technology to increase the efficiency of existing processes, the planning, monitoring and controlling of production, and for the construction of products and plants from standardised modules.

[9] Productivity is defined in Marxist economics in two ways that have different implications. On the one hand, the reduction of socially necessary labour-time through the increase in productivity, which has other implications than the growth in the number of commodities produced by a company by a given quantity of labour. The increase in productivity can thus be expressed either in an increased production of commodities or in a reduced socially necessary labour-time. While the increased output of a company implies a material component and measurement, the reduced social labour-time refers to value or price variables. Although in the latter case productivity is not measured in physical entities, this concept for us also seems to be insufficient. We relate productivity to the surplus value in production, i e. to the total income or the nominal net income per working hour. Thus, the index of productivity refers to the quantum that the incomes can buy (wages, profits, pensions, interest) related to a working hour.

[10] In their various writings, Bichler and Nitzan have repeatedly insisted that the functioning, the modes of operation and the strategies of capitalist corporations are not simply to maximise profits, but rather to beat or surpass the average, which is represented by the current average profit rates of corporations in the various sectors. (cf. Bichler and Nitzan 2009) Average profit rates are influenced by a set of standard instruments such as loans granted to corporations and their interest rates, but especially by the “matching” of the organic composition of capital, accumulation rates and surplus value rates of companies, which are kept flexible by means of competition. The constantly fluctuating average profit rate may be considered the yardstick for the differential capital accumulation – it is the benchmark which indicates for the companies whether they can beat the average in their industry and other industries with their projects or not. It is this form of capital accumulation, which takes place through intra- and inter-capitalist competition (“beat-the-other”) and is deeply inscribed in the social relations of capital, which Bichler and Nitzan call “differential accumulation”. (Ibid.) Of course, the benchmark also indicates if the economic activities of the companies have been able to provide sufficient social cohesion in various class struggles. Moreover, the dynamics of differential capital accumulation always depend on stable growth rates of the national economy.

[11] With regard to the mainstream economists’ affirmation of a mathematical derivation of stable market equilibrium, one must always set virtuality equal to actuality, i.e. eliminate the

factor of time altogether, so that the processes of realisation of capital (actualisation of the virtual), which here are always those of equilibrium, take place simultaneously and immediately (under the conditions preceding them). The (static) equilibrium theory is a normative standard that eliminates dynamic movement – and this is attempted to be demonstrated with simultaneous equations that imply that all significant quantities of the model are the same at the end of a given period as they are at the beginning. From all these equilibrium theories, it is hardly possible to prove crisis-like phenomena, which one would actually have to introduce here as endogenous features. (Freeman 2021)

[12] A large number of labour-intensive jobs in the service sector are much less subject to competitive pressure or outsourcing to other countries because they have to be consumed close to the places of production. These jobs are often poorly paid, so there is often no reason for companies to replace these precarious occupations with the use of new machinery, which also takes years to pay off. And many of these jobs cannot (yet) be replaced by even the most intelligent AI machines because of their operational structure, such as nursing which requires intuitive complexity (from haptic to affective), emotional intelligence and dealing with uncertainty. Thus, and this is Smith's focus again, a polarisation between a highly mechanised, capital-intensive and productive sector and a much larger service sector with low productivity gains has become entrenched in developed countries in recent decades.

Smith further points out that the ubiquity of technological tools, such as the smartphone, which integrates telecommunications, shopping, video and sociality in one gadget, in the context of the rise of the big tech companies and the new platform companies, have far-reaching effects on finance, mobility, consumption, etc., but negligible effects on productivity in industrial workplaces. Moreover, there is a deep dichotomy between two separate service sectors; first the business sectors, which are often intermediary and supply products to industry, so service sectors belong to it, and the consumer sectors, which supply products to individuals and families.

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